

# Notice of Allowability

Application No.

10/825,826

Examiner

Thanhha Pham

Applicant(s)

LIU ET AL.

Art Unit

2813

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/92007.
2. ☒ The allowed claim(s) is/are 1,2,4-12 and 18-63.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

THANHHA S. PHAM  
PRIMARY EXAMINER

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Keith Taboada on 05/23/2007.

The application has been amended as follows:

- In claim 1,

line 6, delete "and"

line 7, change "." to -- ; --

line 8, insert --

forming a second hard mask on the etched layer, the second hard mask having at least one elongated structure different orientation than the at least one elongated structure of the first hard mask;

etching the etched layer through the second hard mask to form a plurality of quantum dots; and

removing the second hard mask. --

- cancel claim 3

- In claim 4,

line 1, change "3" to --1 --

line 1, change "the layer" to -- the etched layer --

- In claim 5,  
line 1, change “3” to -- 1 --
- In claim 6,  
line 1, change “3” to -- 1 --
- In claim 8,  
line 1, change “3” to -- 1 --
- In claim 10,  
line 1, change “3” to -- 1 --
- Cancel claims 13-17
- In claim 18,  
line 1, change “3” to -- 1 --
- In claim 25,  
line 1, change “3” to -- 1 --
- In claim 26,  
line 1, change “3” to -- 1 --
- In claim 27,  
line 7, change “from on” to -- on the --  
line 22, change “the layer” to -- the etched layer --

***Allowable Subject Matter***

2. Claims 1-2, 4-12, 18-63 are allowed.
3. The following is an examiner’s statement of reasons for allowance:

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► Recorded Prior Art fails to disclose or suggest the combination of the process steps of fabricating quantum features from a layer of material as recited in the base claim 1 comprising: forming a second hard mask on the etched layer, the second hard mask having at least one elongated structure different orientation than the at least one elongated structure of the first hard mask; etching the etched layer through the second hard mask to form a plurality of quantum dots; and removing the second hard mask.

► Recorded Prior Art fails to disclose or suggest the combination of the process steps of fabricating quantum dot on a substrate as recited in the base claim 27 comprising: depositing a second hard mask layer on the etched layer of the material of the III-V periodic groups; depositing a second cap layer on the second hard mask layer; forming a second patterned mask having at least one elongated structure disposed in an orientation different than the at least one elongated structure of the first patterned mask on the second hard mask; etching the second cap layer and the second hard mask layer; lateral etching the second hard mask layer; removing the second cap layer; etching the etched layer of the material of the III-V groups; and removing the second hard mask layer.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhha Pham whose telephone number is (571) 272-

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1696. The examiner can normally be reached on Monday and Thursday 9:00AM - 9:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TSP

A handwritten signature in black ink, consisting of a stylized, cursive script that appears to read 'THANHHA S. PHAM'.

THANHHA S. PHAM  
PRIMARY EXAMINER